

Unit 1 Review

- Metric System
 - Use bases and prefixes to give units of a quantity
 - SI system \rightarrow 7 different bases
 - We learned six prefixes
 - Smaller number to larger number \rightarrow decimal moves left
 - Larger number to smaller number \rightarrow decimal moves right

- Scientific Notation

- Way of writing really large or really small numbers easily
- Convert from decimal to scientific notation or from scientific notation to decimal

$$\underline{560.2} = 5.602 \times 10^2 = 5.602E2$$

- Form of scientific notation is

$$- . - - \times 10^-$$

$$- . - - E -$$

$$0.\underline{00091} = 9.1 \times 10^{-4} = 9.1E-4$$

- Scientific Method
 - Steps
 - Observe
 - Research
 - Hypothesis
 - Test hypothesis
 - Gather data
 - Conclude
 - Sharing
 - Variables
 - Independent Variable → the variable you change
 - Dependent Variable → the variable that gets changed by changing the independent variable
 - Constants → variables that stay the same during an experiment
 - Groups
 - Experimental → independent variable IS changed
 - Control → independent variable is NOT changed

- Physical v. Chemical Properties and Changes
 - Physical properties → observable items about an object
 - Chemical properties → properties defined by the chemical composition of the object
 - Physical changes → changes in physical properties, but the underlying material stays the same
 - Chemical changes → changes in chemical structure of an object

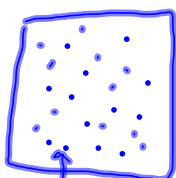
- Types of Matter
 - Mixtures
 - Heterogeneous
 - Homogeneous
 - Substances
 - Compounds
 - Elements

Atom → Molecule

Smallest part of element 2 or more atoms chemically combined ↘
smallest part of a compound

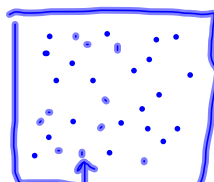
 H, O H_2O

Element



atom

Compound



molecule

- Phases of Matter
 - BEC, solid, liquid, gas, plasma
(least energy to most energy)
 - Terms for going from one phase to another
 - Melting Point → exists as both solid and liquid
 - Boiling Point → exists as both liquid and gas

• Density

- $\frac{\text{mass}}{\text{volume}}$

- See notes for practice problems

D = 